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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,745	11/03/2000	Young-Wan Kwon	1607-0248P	4999

7590 07/18/2002

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MC

Office Action Summary

Application No.

09/704,745

Applicant(s)

KWON ET AL.

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. In response to the Applicant's request, the Examiner is now reconsidering the election of species requirement and acting on all of the claims in the present application.

Claim Objections

2. Claim 15 is objected to because of the following informalities: it should be "the upper linear polarizer" instead of "the upper". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall (USPN 5,841,494) in view of Abileah et al. (USPN 5,629, 784) and Kaneko (USPN 6,295,108 B1).

As shown in Fig. 6, Hall discloses a liquid crystal display (LCD), comprising:

a back light unit 11 to produce and supply light;

a cholesteric liquid crystal (CLC) polarizer to transmit one of left-circularly polarized light and right-circularly polarized light from the backlight, and to reflect other light not transmitted;

a lower substrate 6 on which an absorbing type CLC color filter layer 20 is formed wherein the CLC color filter layer transmits the circularly polarized light from the

CLC polarizer having specific red, green, and blue wavelengths and reflects other light not transmitted (col. 7, lines 18-41);

a liquid crystal layer 4 to selectively revolve a polarized direction of the circularly polarized light from the CLC color filter layer;

an upper substrate; and a CLC polarizer 12 above the upper substrate.

Hall discloses a LCD that is basically the same as that recited in claims 1-11, and 13-15 except for a collimating sheet, a linear polarizer, a quarter wavelength film below the linear polarizer, and a hologram diffuser. With respect to all claims, as shown in Fig. 3, Abileah discloses a LCD comprising a collimating sheet 23 to collimate the light supplied by the back light unit 29, a reflecting plate to recycle the other light initially reflected by the CLC polarizer up toward the CLC polarizer, an upper substrate over the liquid crystal layer having a hologram diffuser 21 and a planarization layer 13 disposed thereon, and an upper linear polarizer 15 to transform the polarized light from the hologram diffuser into linearly polarized light. Meanwhile, as shown in Fig. 14, Kaneko discloses a LCD comprising a liquid crystal element 12, an upper linear polarizer 8, two CLC polarizers 10,18 and a retardation (quarter wavelength) film 13 disposed below the upper linear polarizer to transform the circularly polarized light of the predetermined direction into linearly-polarized light. Kaneko further discloses that a plurality of retardation films can be used to obtain more linearly polarized light, providing more favorable colored display (col. 8, lines 59-64). Kaneko also discloses a conventional LCD displays characters or figures on a background colored with a dichroic dye (col. 1, lines 25-30).

With respect to claims 3-7, as shown in Fig. 17, in another embodiment, Kaneko discloses a LCD comprising a liquid crystal element 7, an upper linear polarizer 8, a CLC polarizer 10, a quarter wavelength film 9, a lower polarizer 22 above the quarter wavelength film, and a lower substrate 1 above the lower linear polarizer. The lower linear polarizer, the quarter wavelength, the CLC polarizer, and the upper polarizer are all bonded to the liquid crystal element (col. 20, lines 42-45 and 55-56). As to the product-by-process limitation "hardened by light irradiation" of claim 6, and those recited in claims 11 and 12, it has been recognized that "Even through product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process". *In re Thorpe*, 227 USPQ 964,966 (Fed. Cir. 1985). See also MPEP 2113.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Hall with the teachings of Abileah and Kaneko by forming a collimating sheet, a hologram diffuser, a linear polarizer, and a quarter wavelength film below the linear polarizer so as to improve the brightness and the contrast ratio over a wide range of viewing angles.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hall (USPN 5,841,494) in view of Abileah et al. (USPN 5,629, 784) and Kaneko (USPN

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6,295,108 B1) as applied to claims 1-11 and 13-15 above and further in view of Davis et al. (USPN 5,882,029).

The LCD of Hall as modified in view of Abileah and Kaneko above includes all that is recited in claim 12 except for an absorbing type color filter layer. Davis disclose an illumination system comprising a CLC color filter 18 which is integral with a LCD (col. 4, lines 5-8) as shown in Fig. 2. Davis further discloses that an array of color filters is arranged to absorb light of incorrect color (col. 4, lines 14-18). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD of Hall with the teaching of David by employing an absorbing type color filter layer so as to reduce problems associated with light from outside the display.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Williams Sikes, can be reached at (703) 308-4842.

Thoi Duong

07/14/2002

TOAN TON
Primary Examiner — 2800
